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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,572	04/06/2001	Takashi Ueno	4786US	6508

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SALT LAKE CITY, UT 84110

EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,572

Applicant(s)

UENO, TAKASHI

Examiner

Sow-Fun Hon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10-15 and 18-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-15 and 18-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

Withdrawn Rejections

1. The 35 U.S.C. 112, 2nd paragraph rejections in Paper # 4 (mailed 03/31/03) have been withdrawn due to Applicant's clarification and amendment in Paper # 6 (filed 07/30/03).
2. The 35 U.S.C. 102(b) and 103(a) rejections in Paper # 4 (mailed 03/31/03) have been withdrawn due to Applicant's amendment in Paper # 6 (filed 07/30/03).

New Rejections

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1, 4 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 of U.S. Patent No. 6,514,628. Although the conflicting claims are not identical, they are not patentably distinct from each other because the reflector of '628 which comprises Ag as a main component; 0.5 to 3.0 wt % of Pd and 0.1 to 3.0

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wt % of a third element selected from the group consisting of Ta, Ni, is a subset of the presently claimed embodiments.

5. Claim 30 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,228,457. Although the conflicting claims are not identical, they are not patentably distinct from each other because the reflective film of '457 which comprises a thin film of AgPdCu alloy containing 0.5 to 3.0 weight % Pd and 0.1 to 3.0 weight % Cu where Ag is a major component as understood from the specification ('457, column 6, lines 45-70), is a subset of the presently claimed embodiments.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-6, 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueno et al. (US 6,228,457).

Ueno et al. teaches a reflecting layer comprising Ag as a main component; 0.5 to 3.0 weight % Pd as a first metal (which is part of the claimed range of 0.1 to 3.0 weight %) and 0.1 to 3.0 weight % Cu as a second metal. The Ag, Pd and Cu are metals since they are taught to make up a reflective alloy (abstract) which is descriptive of a mixture of metals. Ti is also used in place of Cu (abstract, column 6, lines 45-70). The layer is deposited by sputtering (column 5,

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lines 35-45) onto a plastic substrate (column 7, lines 40-50) or a glass substrate (column 8, lines 30-35).

The applied reference has a common inventor, Ueno, with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 103

8. Claims 1-7, 10-11, 13-15, 18-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuyoshi et al.

Fukuyoshi et al. teaches a liquid crystal display device which comprises a reflective wiring electrode (column 1, lines 5-60 and column 3, lines 1-20) formed from a laminate (multilayered) conductive film comprising a silver-based based layer formed of a silver-based metallic element (material) laminated on both sides with a first layer and a second layer of transparent metal oxide (column 2, lines 20-70).

One embodiment of the Ag (silver)-based layer is an alloy of Ag (silver) with 0.1 to 3 atomic percent of Cu (copper) and Au (gold) (column 11, lines 40-50). Fukuyoshi et al. teaches that other elements which can take the place of Cu and Au are Ti (titanium), Al (aluminum), Ni (nickel), Pd (palladium), all of which are equivalent in terms of preventing Ag (silver) migration. While Au is most preferred because it contributes to the stabilization of Ag (column 5, lines 30-

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45), Cu is added to reduce the cost (column 17, lines 25-40), and Ti is added to increase adhesivity to the oxide layers (column 5, lines 30-45). Since Fukuyoshi et al. teaches the equivalence of Pd to Au, and Ti to Cu in terms of preventing Ag migration, but that each element has other desirable properties, in the absence of a showing of unexpected results, it is the examiner's position that the replacement of Au with Pd and the replacement of Cu with Ti are alternate embodiments which are the result of routine experimentation for the desired end use.

The first transparent layer of metal oxide is formed on the transparent (glass) substrate, the Ag-based layer (silver thin layer) is formed on top of it, and then the second transparent layer of metal oxide is formed on top of the Ag-based layer. The deposition method is sputtering (column 13, lines 1-45). The transparent metal oxide layer is formed of a main component (primary metal oxide) of In_2O_3 (indium oxide) with at least one of ZrO_2 , SiO_2 , TiO_2 , Ta_2O_5 , Nb_2O_5 (a secondary oxide of zirconium, silicon, titanium, tantalum, niobium, chromium) (column 4, lines 1-50). The transparent substrate is formed of glass or plastic resin (column 9, lines 40-55).

Fukuyoshi et al. teaches that the silver layer establishes a high contrast display on the screen (column 2, lines 20-30). One of ordinary skill in the art is familiar with a laptop having a liquid crystal display monitor or a cellular phone with a liquid crystal display panel, both of which qualify as portable terminal devices.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuyoshi et al. as applied to claims 1-7, 10-11, 13-15, 18-40 above, and further in view of Gibbons et al.

Fukuyoshi et al. has been discussed above, and teaches the liquid crystal display device which comprises a reflective wiring electrode formed from a laminate conductive film

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comprising a reflective silver-based based layer. Fukuyoshi et al. fails to teach that metal in its elemental form instead of the oxide may be used as the base layer between the silver-based reflective layer and the substrate.

Gibbons et al. teaches that in reflector films (column 1, lines 5-70), the adhesion to plastic substrates of reflective metals such as Ag (silver), Cu (copper) and Au (gold) (abstract) is improved if a primer layer of a metal is deposited between the two layers (column 2, lines 40-50). Silver is taught to be the preferred reflective metal (column 5, lines 40-50). The adhesion promoting metal is Si(silicon), Ta(tantalum), Ti(titanium), Mo(molybdenum), Cr(chromium) or Al(aluminum) which have to be deposited as metals (column 7, lines 20-35) in order for them to be adhesion-promoting (column 15, lines 1-15) in lieu of the list of metal oxides (column 6, lines 10-45). Gibbons et al. thus teaches that the Si, Ta, Ti, Mo, Cr, Al metals can take the place of the listed metal oxides for adhesion of the Ag-based layer to the plastic resin substrate in order to take advantage of their physical properties.

Since Gibbons et al. is directed to reflectors, and Fukuyoshi et al. is directed to the use of reflectors in a laminate, they are analogous art.

Therefore it would have been obvious to one of ordinary skill in the art to have used the metal adhesion promoters of Gibbons et al. in lieu of the indium oxide base layer in the invention of Fukuyoshi et al. in order to obtain a highly reflective and cohesive conductive laminate.

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Response to Arguments

10. Applicant's arguments with respect to claims 1-7, 10-15, 18-29 have been considered but are moot in view of the new ground(s) of rejection. In order to advance prosecution, however, one argument with respect to the valid use of Fukuyoshi et al. is addressed below.

11. Applicant argues that Fukuyoshi et al. fails to teach the combination of Ag, as a main component, together with a first metal and a second metal since there appears to be only examples of Ag and Cu combined. Applicant is respectfully apprised that Fukuyoshi et al. does give an example of a ternary alloy of 98.4 atomic percent of Ag, 0.8 atomic percent of Au and 0.8 atomic percent of Cu (column 17, lines 10-25).

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

SH
Sow-Fun Hon
11/14/03


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772 11/19/03